

## Power Transistor (−60V, −3A)

## 2SB1370

## ●Features

- 1) Low saturation voltage, typically  $V_{CE(sat)} = -0.3V$  at  $I_C / I_E = -2A / -0.2A$ .
- 2) Excellent DC current gain characteristics.
- 3)  $P_C = 2W (T_a = 25^\circ C) / 30W (T_c = 25^\circ C)$
- 4) Wide SOA (safe operating area).

## ●Packaging specifications and hFE

Type	2SB1370
Package	TO-220FN
h <sub>FE</sub>	EF
Code	—
Basic ordering unit (pieces)	500

●Absolute maximum ratings (T<sub>a</sub>=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CBO</sub>	−60	V
Collector-emitter voltage	V <sub>CEO</sub>	−60	V
Emitter-base voltage	V <sub>EB0</sub>	−5	V
Collector current	I <sub>C</sub>	−3	A (DC)
	I <sub>CP</sub>	−6	A (Pulse) *
Collector power dissipation	P <sub>C</sub>	2	W
		30	W (T <sub>c</sub> =25°C)
Junction temperature	T <sub>J</sub>	150	°C
Storage temperature	T <sub>stg</sub>	−55~+150	°C

\* Single pulse, P<sub>w</sub>=100ms●Electrical characteristics (T<sub>a</sub>=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV <sub>CBO</sub>	−60	—	—	V	I <sub>C</sub> =−50 μA
Collector-emitter breakdown voltage	BV <sub>CEO</sub>	−60	—	—	V	I <sub>C</sub> =−1mA
Emitter-base breakdown voltage	BV <sub>EB0</sub>	−5	—	—	V	I <sub>E</sub> =−50 μA
Collector cutoff current	I <sub>CBO</sub>	—	—	−10	μA	V <sub>CB</sub> =−60V
Emitter cutoff current	I <sub>EB0</sub>	—	—	−10	μA	V <sub>EB</sub> =−4V
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	—	—	−1.5	V	I <sub>C</sub> /I <sub>E</sub> =−2A/−0.2A
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	—	—	−1.5	V	I <sub>C</sub> /I <sub>E</sub> =−2A/−0.2A
DC current transfer ratio	h <sub>FE</sub>	100	—	320	—	V <sub>CE</sub> /I <sub>C</sub> =−5V/−0.5A
Transition frequency	f <sub>T</sub>	—	15	—	—	V <sub>CE</sub> =−5V, I <sub>E</sub> =0.5A, f=5MHz
Output capacitance	C <sub>ob</sub>	—	80	—	pF	V <sub>CB</sub> =−10V, I <sub>E</sub> =0A, f=1MHz

\* Measured using pulse current.

(94L-411-B303)

## Power Transistor (−60V, −3A)

## 2SB1655/2SB1565

## ●Features

- 1) Low saturation voltage, typically  $V_{CE(sat)} = -0.3V$  at  $I_C / I_E = -2A / -0.2A$ .
- 2) Excellent DC current gain characteristics.
- 3) Wide SOA (safe operating area).

## ●Packaging specifications and hFE

Type	2SB1655	2SB1565
Package	TO-220FN	TO-220FN
h <sub>FE</sub>	E	EF
Code	—	—
Basic ordering unit (pieces)	500	500

●Absolute maximum ratings (T<sub>a</sub>=25°C)

Parameter	Symbol	Limits	Unit
Collector-base voltage	V <sub>CBO</sub>	−80	V
Collector-emitter voltage	V <sub>CEO</sub>	−60	V
Emitter-base voltage	V <sub>EB0</sub>	−7	V
Collector current	I <sub>C</sub>	−3	A (DC)
	I <sub>CP</sub>	−6	A (Pulse) *
Collector power dissipation	P <sub>C</sub>	2	W
		25	W (T <sub>c</sub> =25°C)
Junction temperature	T <sub>J</sub>	150	°C
Storage temperature	T <sub>stg</sub>	−55~+150	°C

\* Single pulse, P<sub>w</sub>=100ms●Electrical characteristics (T<sub>a</sub>=25°C)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Collector-base breakdown voltage	BV <sub>CBO</sub>	−80	—	—	V	I <sub>C</sub> =−50 μA
Collector-emitter breakdown voltage	BV <sub>CEO</sub>	−60	—	—	V	I <sub>C</sub> =−1mA
Emitter-base breakdown voltage	BV <sub>EB0</sub>	−7	—	—	V	I <sub>E</sub> =−50 μA
Collector cutoff current	I <sub>CBO</sub>	—	—	−10	μA	V <sub>CB</sub> =−60V
Emitter cutoff current	I <sub>EB0</sub>	—	—	−10	μA	V <sub>EB</sub> =−7V
Collector-emitter saturation voltage	2SB1655	—	—	−1	V	I <sub>C</sub> /I <sub>E</sub> =−2A/−0.2A
	2SB1565			−1.5	V	
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	—	—	−1.5	V	I <sub>C</sub> /I <sub>E</sub> =−2A/−0.2A
DC current transfer ratio	2SB1655	h <sub>FE</sub>	100	—	200	—
	2SB1565		100	—	320	
Transition frequency	f <sub>T</sub>	—	15	—	MHz	V <sub>CE</sub> =−5V, I <sub>E</sub> =0.5A, f=5MHz
Output capacitance	C <sub>ob</sub>	—	50	—	pF	V <sub>CB</sub> =−10V, I <sub>E</sub> =0A, f=1MHz

\* Measured using pulse current.

(94L-456-B349)